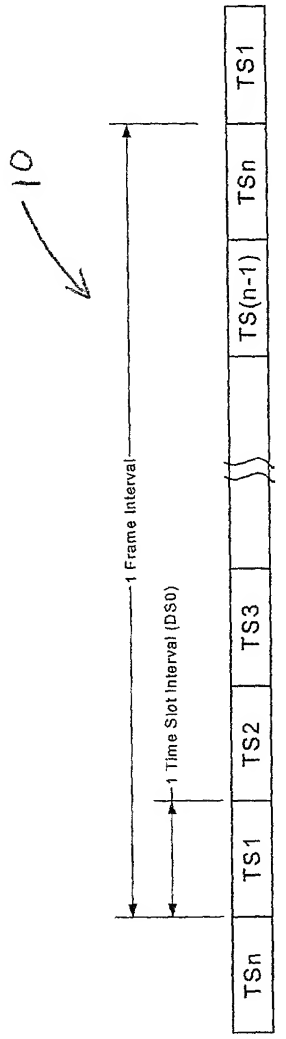


(Prior Art)

Figure 1

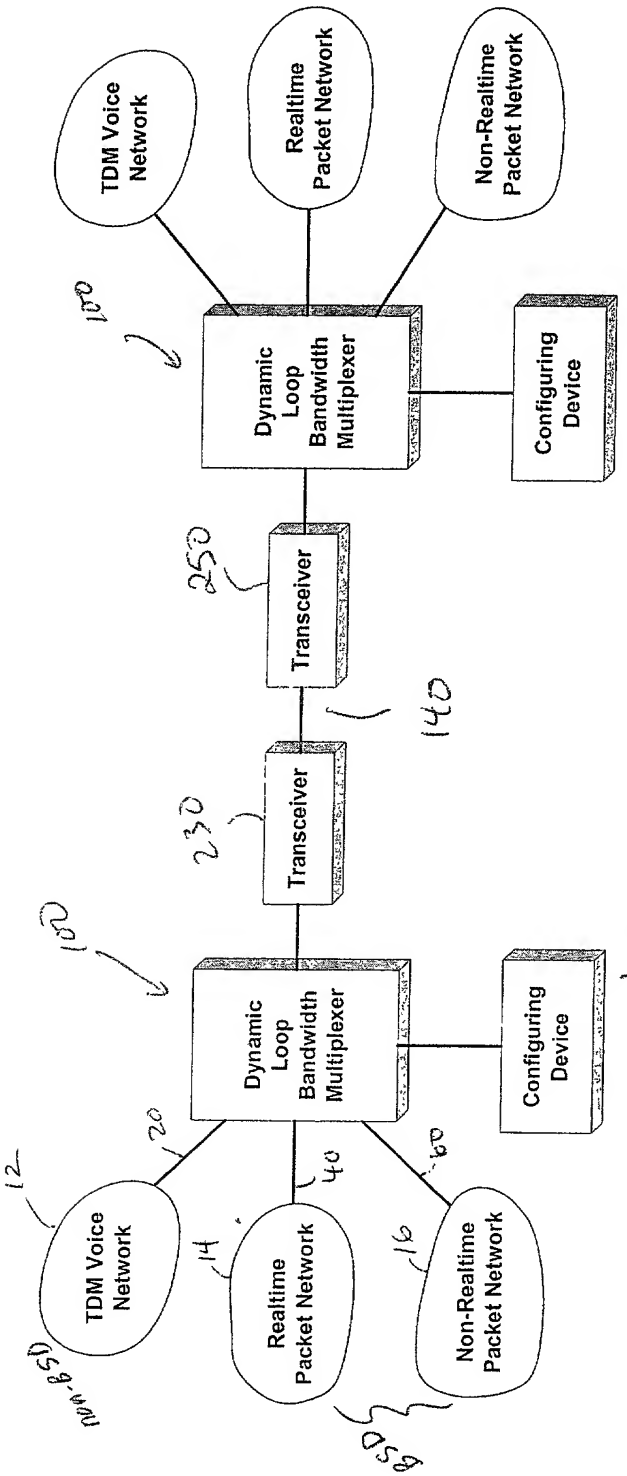

TDM Voice Network
Realtime Packet Network
Non-Realtime Packet Network
100
Dynamic Loop Bandwidth Multiplexer
Configuring Device
250
Transceiver
140
230
Transceiver
100
Dynamic Loop Bandwidth Multiplexer
Configuring Device
160
20
12
40
14
60
16
TDM Voice Network
Realtime Packet Network
Non-Realtime Packet Network
50
50
50
10

Figure 2

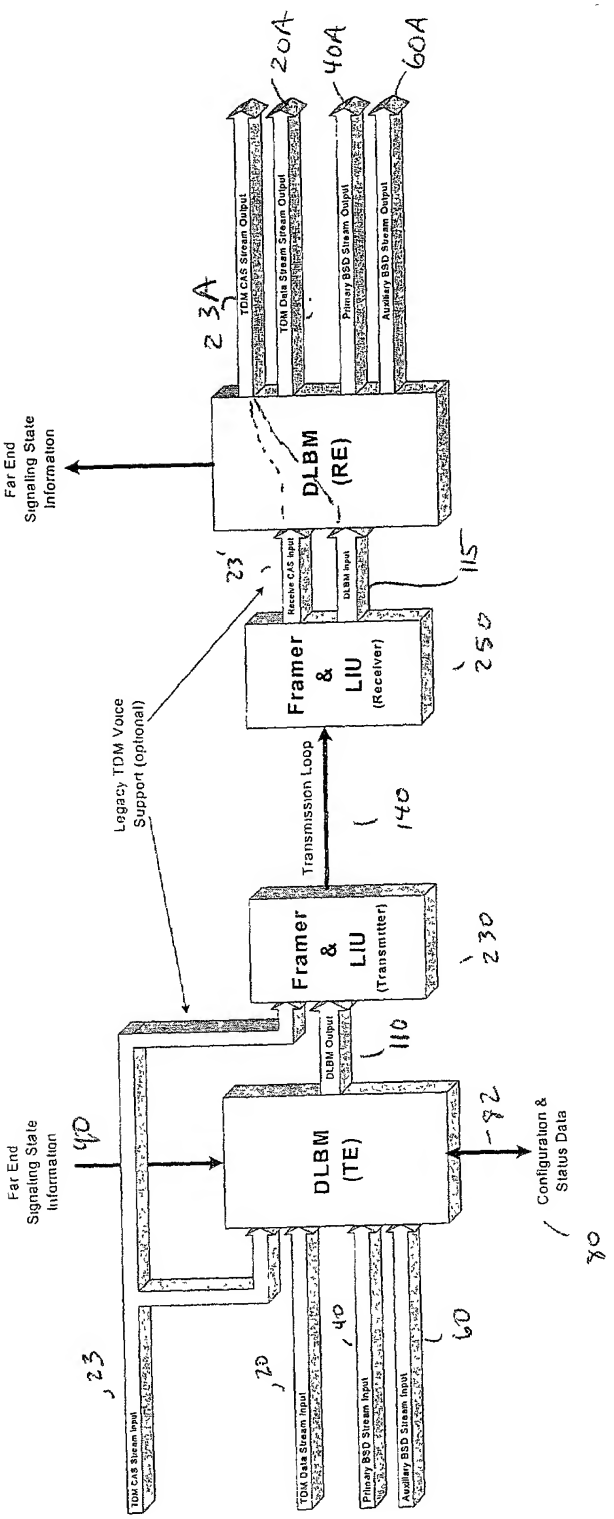

20A
40A
60A
23A
TDM CAS Stream Output
TDM Data Stream Stream Output
Primary BSD Stream Output
Auxiliary BSD Stream Output
DLBM (RE)
Far End Signaling State Information
23'
Receive CAS Input
DLBM Input
115
Framer & LIU (Receiver)
250
Legacy TDM Voice Support (optional)
Transmission Loop
140
Framer & LIU (Transmitter)
230
DLBM Output
110
DLBM (TE)
82
Configuration & Status Data
80
Far End Signaling State Information
40
23
TDM CAS Stream Input
29
TDM Data Stream Input
40
Primary BSD Stream Input
Auxiliary BSD Stream Input
60

Figure 3

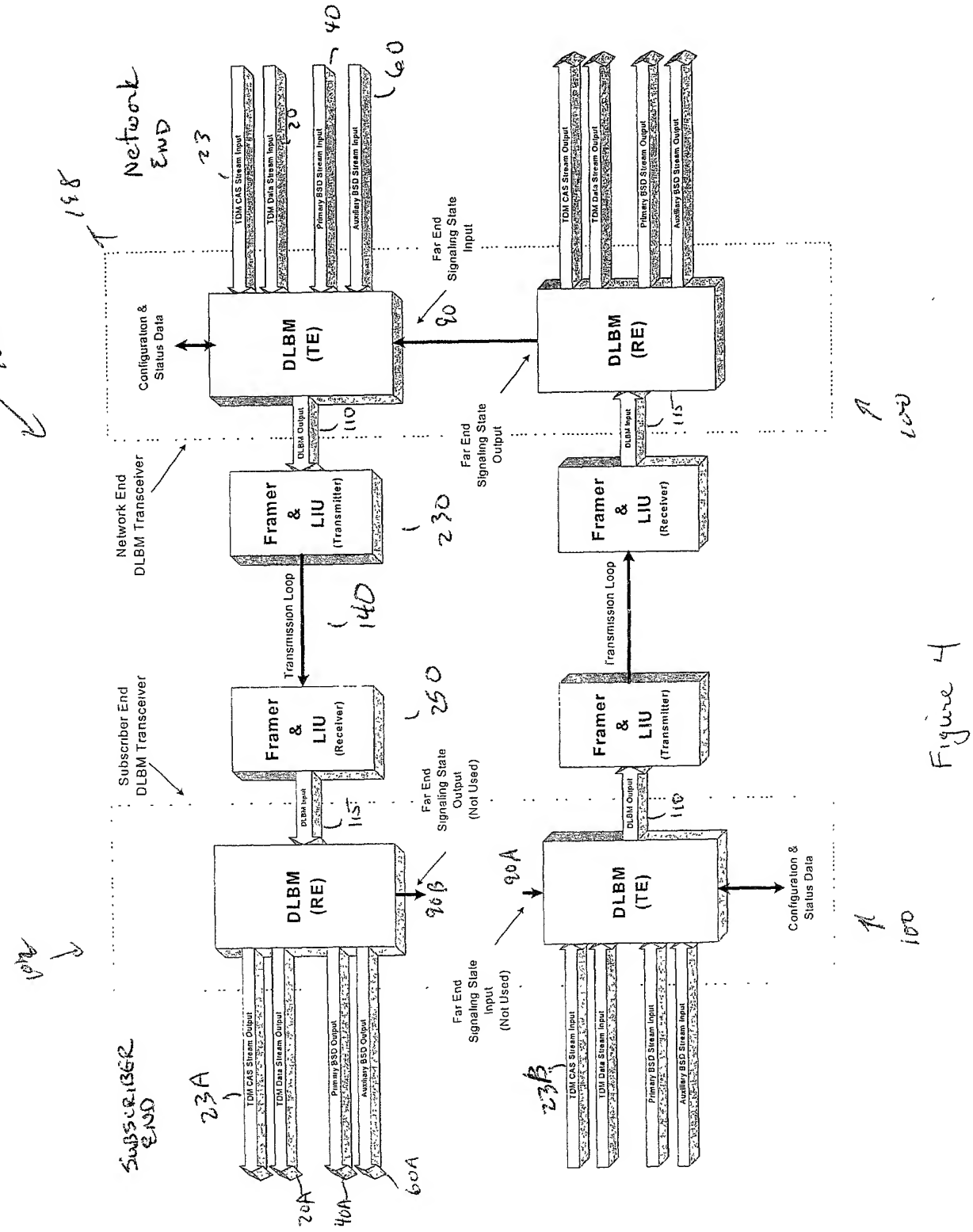

Network End
Subscriber End
DLBM (TE)
DLBM (RE)
DLBM (RE)
DLBM (TE)
Framer & LIU (Transmitter)
Framer & LIU (Receiver)
Framer & LIU (Receiver)
Framer & LIU (Transmitter)
Network End DLBM Transceiver
Subscriber End DLBM Transceiver
Configuration & Status Data
Configuration & Status Data
Transmission Loop
Transmission Loop
Far End Signaling State Input
Far End Signaling State Output
Far End Signaling State Output (Not Used)
Far End Signaling State Input (Not Used)
TDM CAS Stream Input
TDM Data Stream Input
Primary BSD Stream Input
Auxiliary BSD Stream Input
TDM CAS Stream Output
TDM Data Stream Output
Primary BSD Stream Output
Auxiliary BSD Stream Output
DLBM Output
DLBM Input
DLBM Output
DLBM Input

Figure 4

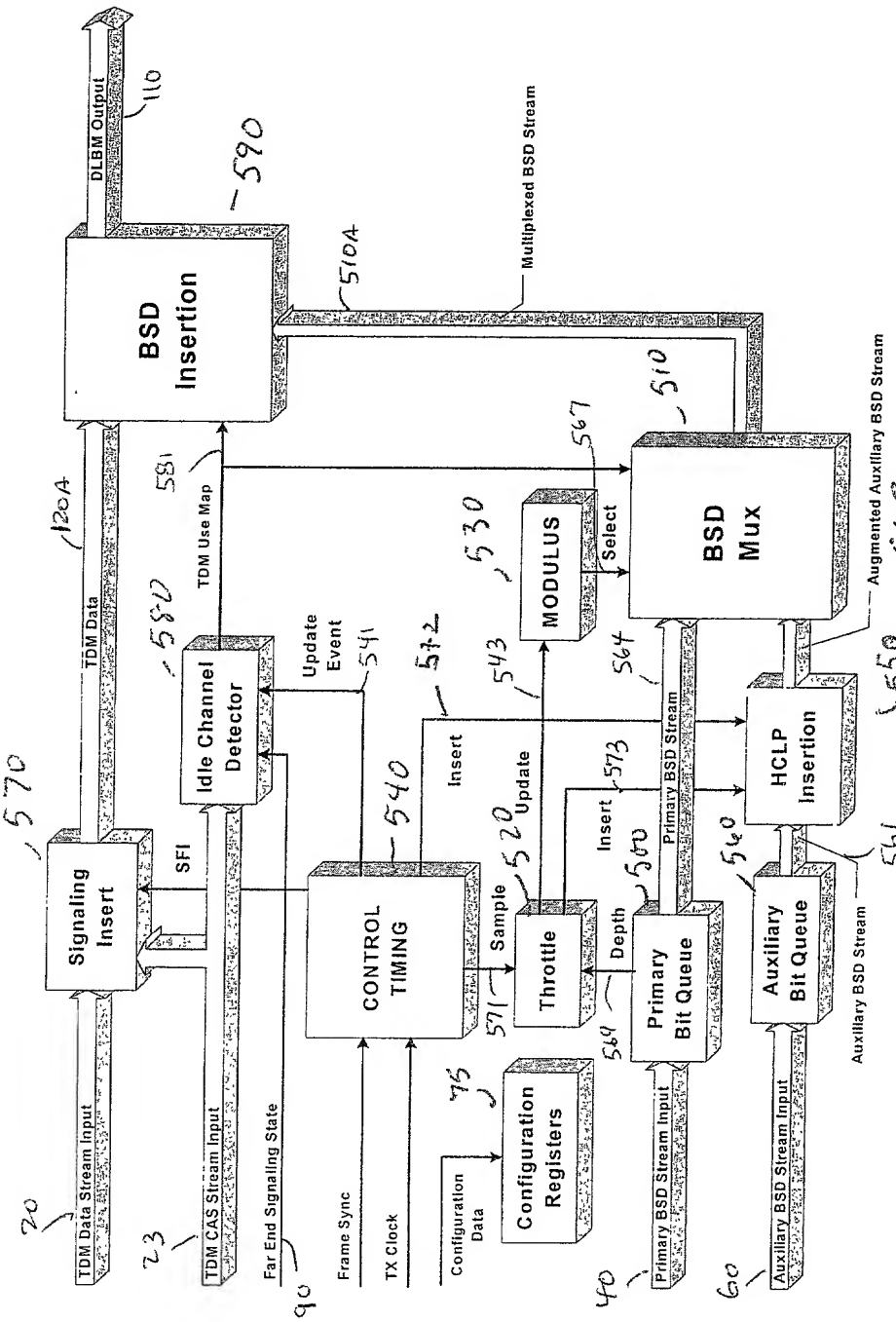

DLBM Output
110
590
BSD Insertion
510A
Multiplexed BSD Stream
120A
TDM Data
581
TDM Use Map
580
Idle Channel Detector
Update Event
541
542
543
530
MODULUS
567
Select
510
BSD Mux
564
Augmented Auxiliary BSD Stream
565
550
570
Signaling Insert
SFI
540
Insert
Update
520
Sample
Throttle
571
Insert
573
Primary BSD Stream
HCLP Insertion
561
Depth
569
Primary Bit Queue
560
Auxiliary Bit Queue
Auxiliary BSD Stream
TDM Data Stream Input
20
TDM CAS Stream Input
23
Far End Signaling State
90
Frame Sync
TX Clock
Configuration Data
75
Configuration Registers
40
Primary BSD Stream Input
60
Auxiliary BSD Stream Input

Figure 5

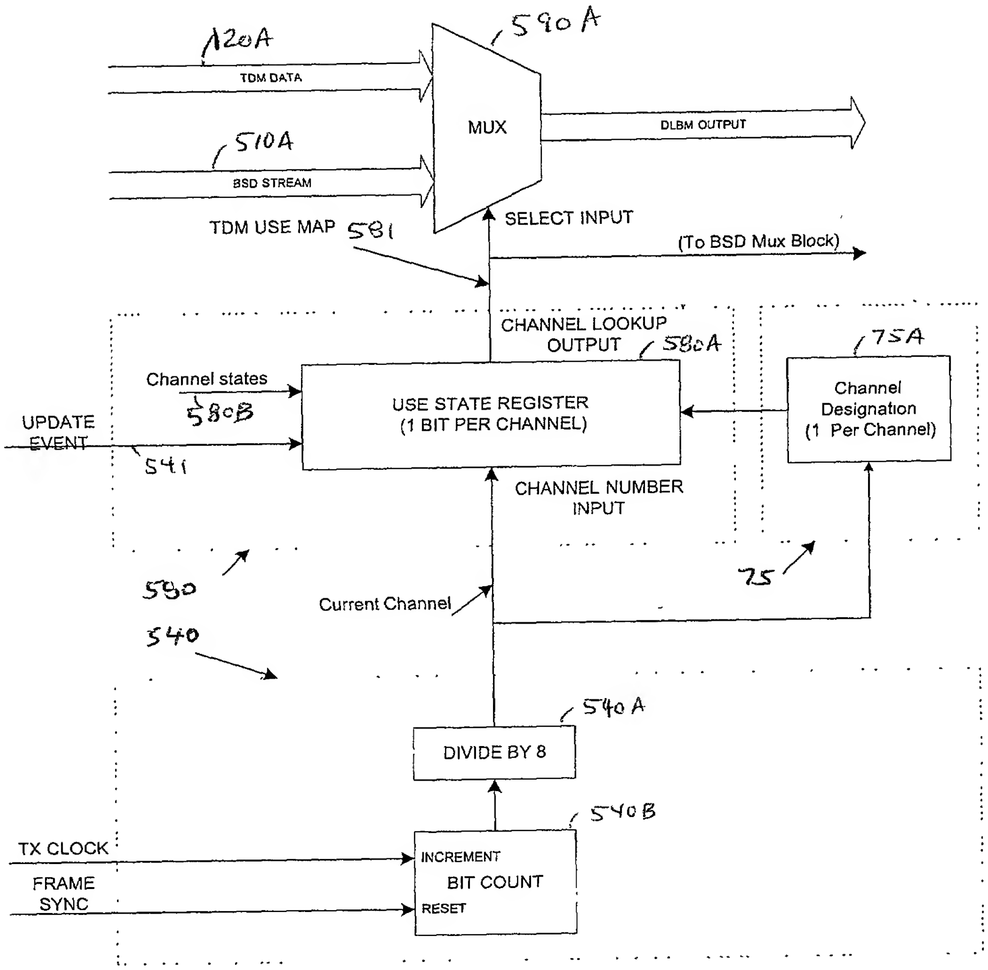
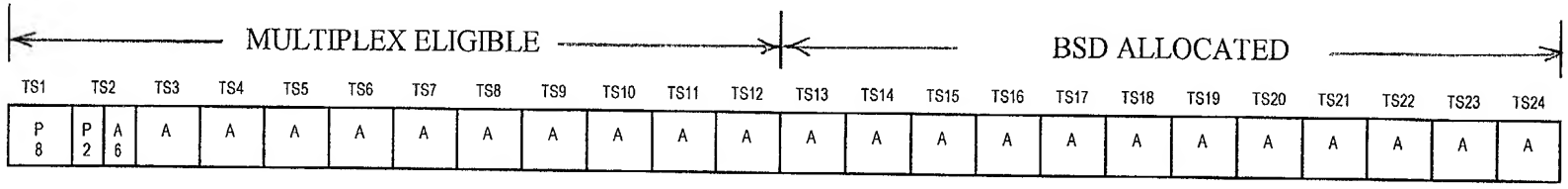
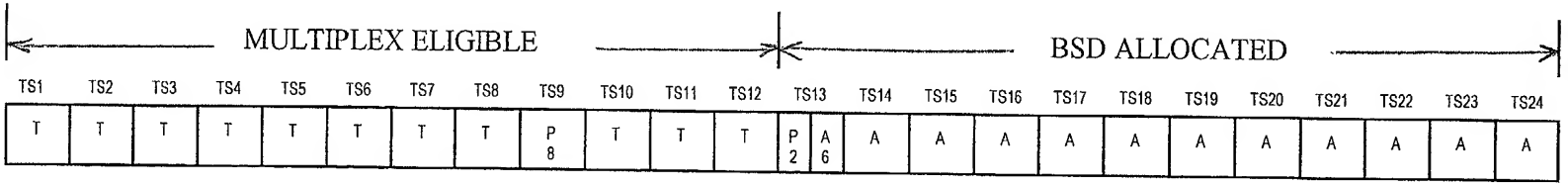


Figure 6



P = PRIMARY; A = AUXILIARY
MODULUS = 10
TS1 to TS12 = IDLE

Figure 7



P = PRIMARY; A = AUXILIARY; T = TDM
MODULUS = 10
TS1 to TS8 = ACTIVE; TS9 = IDLE; TS10 to TS12 = ACTIVE

Figure 8

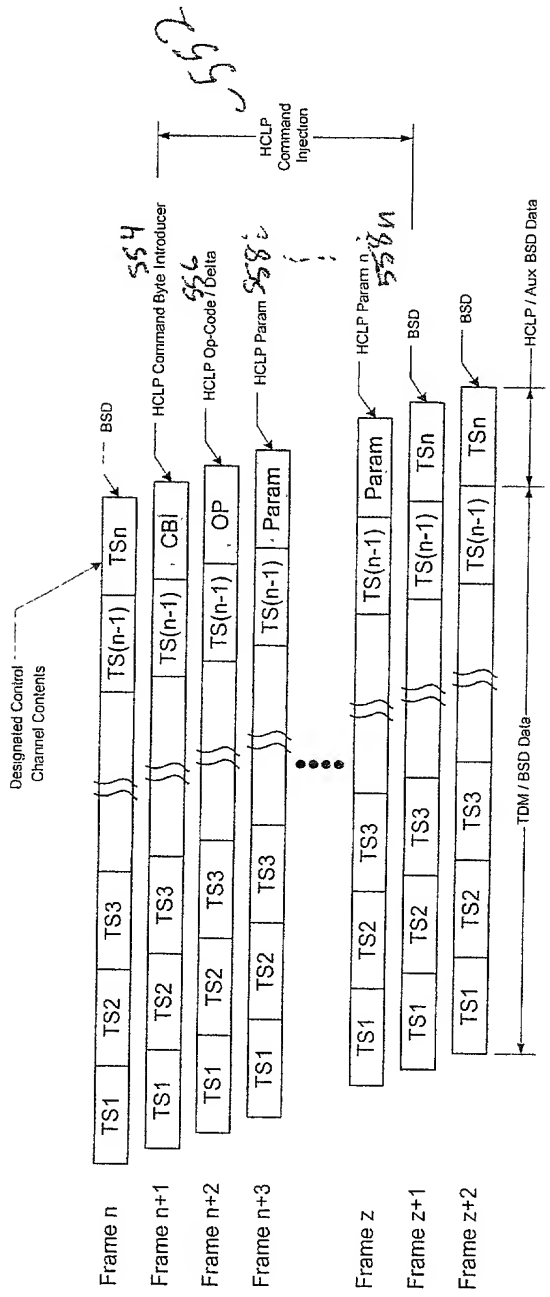

Designated Control Channel Contents
BSD
HCLP Command Byte Introducer
HCLP Op-Code/Delta
HCLP Param
HCLP Param n
HCLP Command Injection
HCLP / Aux BSD Data
TDM / BSD Data
Frame n
Frame n+1
Frame n+2
Frame n+3
Frame z
Frame z+1
Frame z+2
TS1
TS2
TS3
TS(n-1)
TSn
CBI
OP
Param
554
556
558
558'
558n
552

Figure 9

Docket/App No.: 3232.1000-001
Title: System and Method for Dynamic Local Loop Bandwidth Multiplexing
Inventors: Stephen H. Redington

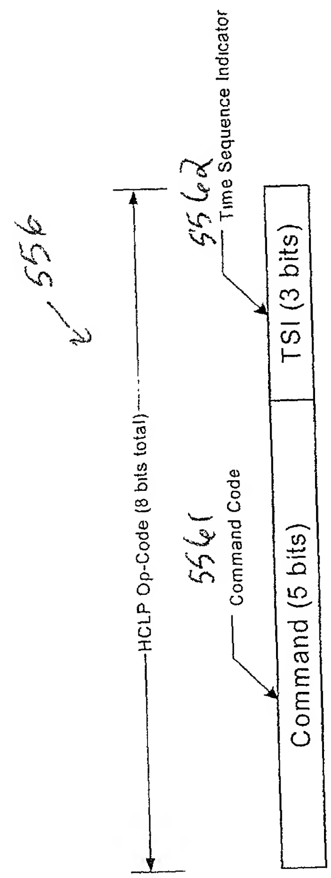


Figure 10

5524
HCLP sequence for Synchronize E-1
CBI
Op-Code
SE1 Op-Code
Param1
TDM Use Map
Param2
TDM Use Map
Param3
TDM Use Map
Param4
TDM Use Map
Param5
Partition Modulus
5523
HCLP sequence for Synchronize T-1
CBI
Op-Code
ST1 Op-Code
Param1
TDM Use Map
Param2
TDM Use Map
Param3
TDM Use Map
Param4
Partition Modulus
5522
HCLP sequence for Partition
CBI
Op-Code
PAR Op-Code
Param1
Partition Modulus
5521
HCLP sequence for No Operation
CBI
Op-Code
NOP Op-Code

Figure 11

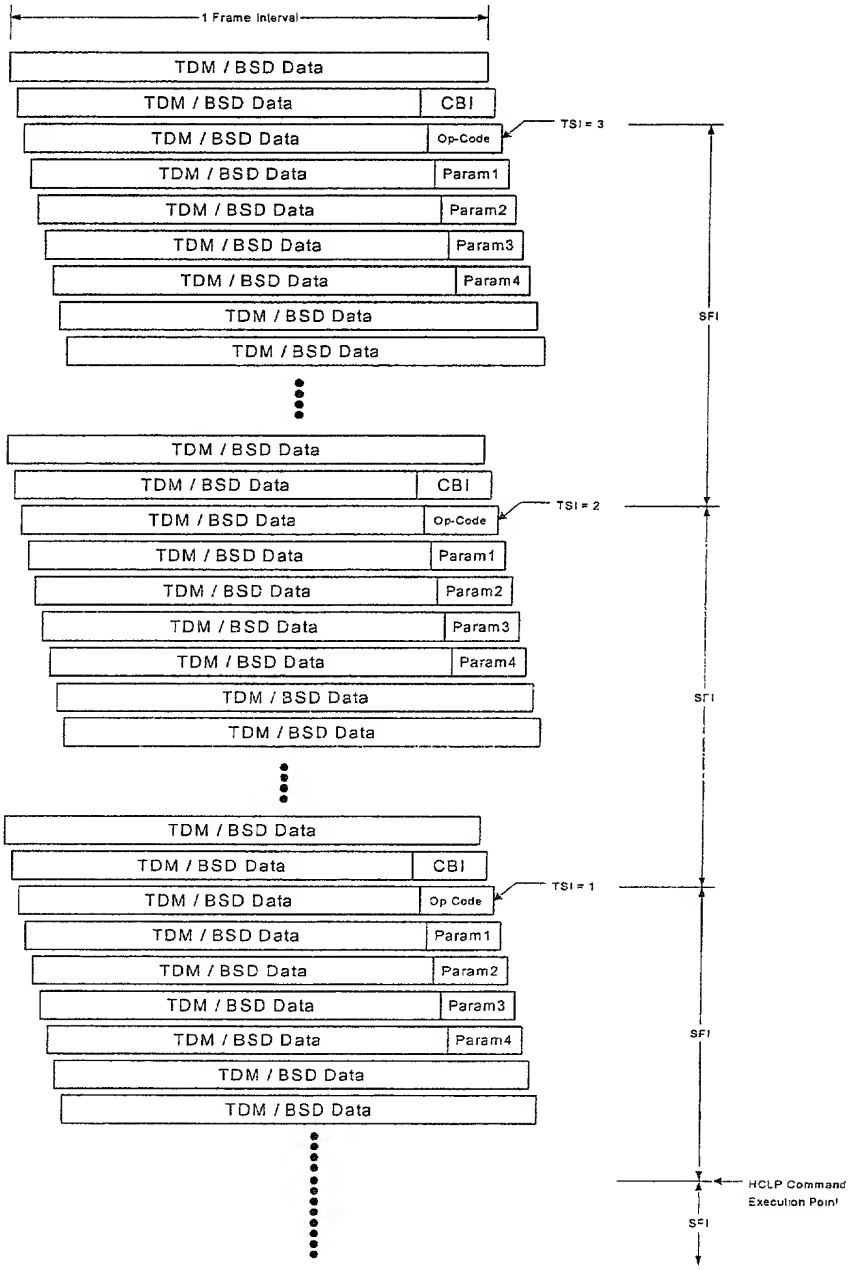

1 Frame Interval
TDM / BSD Data
CBI
Op-Code
Param1
Param2
Param3
Param4
TSI = 3
TSI = 2
TSI = 1
Op Code
SFI
HCLP Command Execution Point

Figure 12

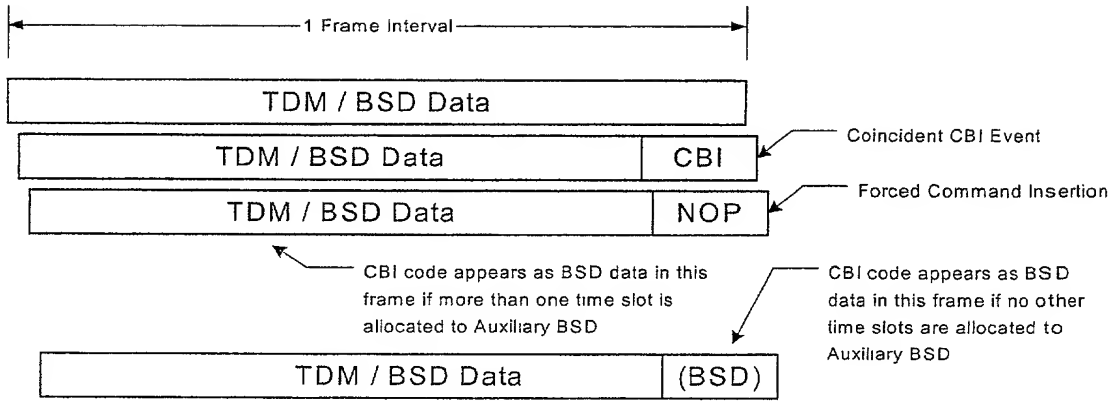


Figure 13

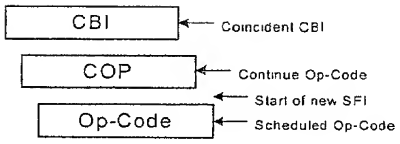


Figure 14

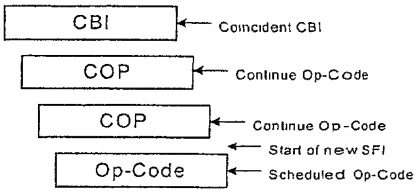


Figure 15

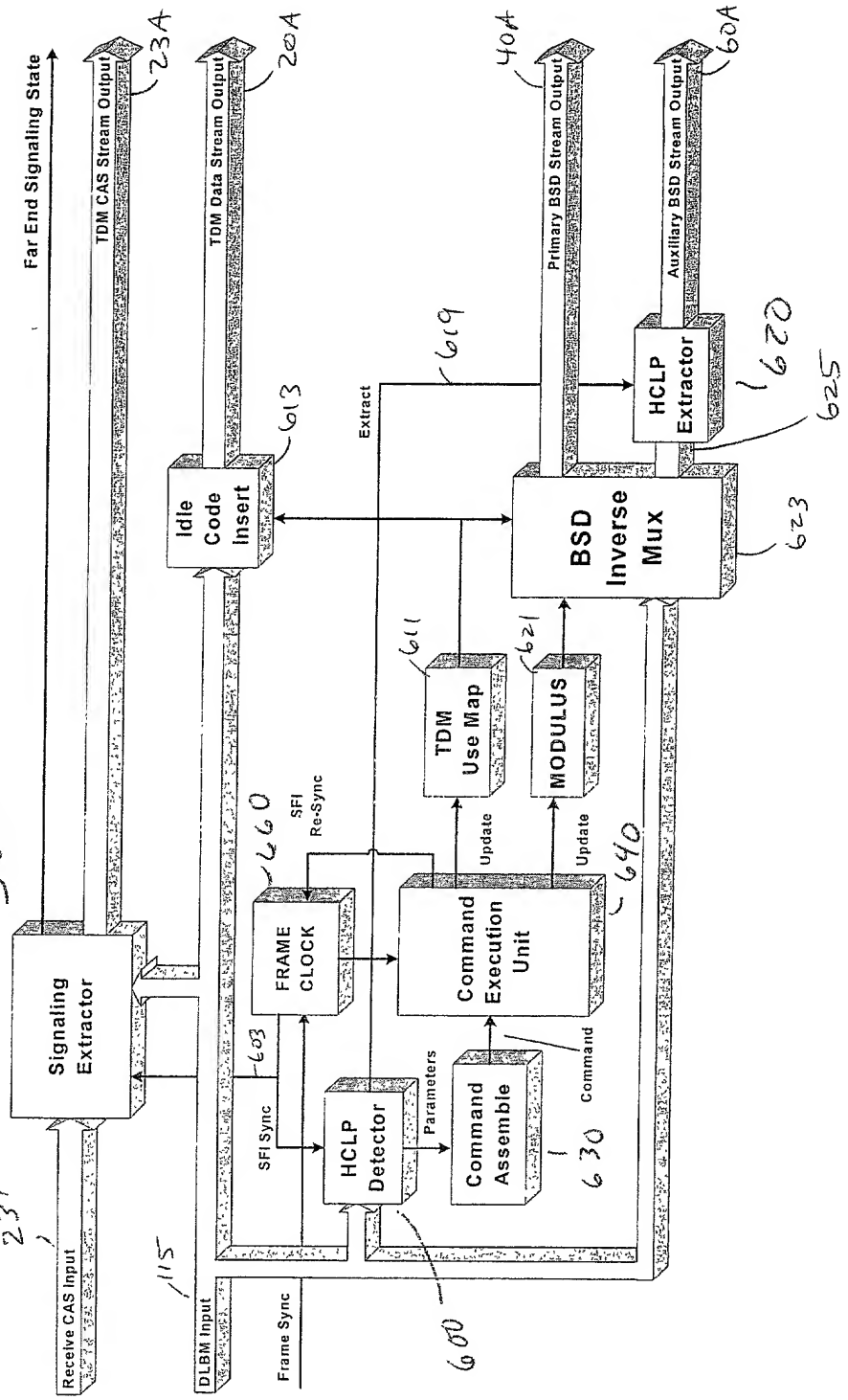

Far End Signaling State
TDM CAS Stream Output
TDM Data Stream Output
Primary BSD Stream Output
Auxiliary BSD Stream Output
234
204
404
604
Idle Code Insert
613
Extract
619
HCLP Extractor
1620
625
BSD Inverse Mux
623
611
TDM Use Map
621
MODULUS
Update
Update
660
SFI Re-Sync
FRAME CLOCK
603
Command Execution Unit
640
Command
630
Parameters
HCLP Detector
SFI Sync
Signaling Extractor
670
231
115
Receive CAS Input
DLBM Input
Frame Sync
600

Figure 16

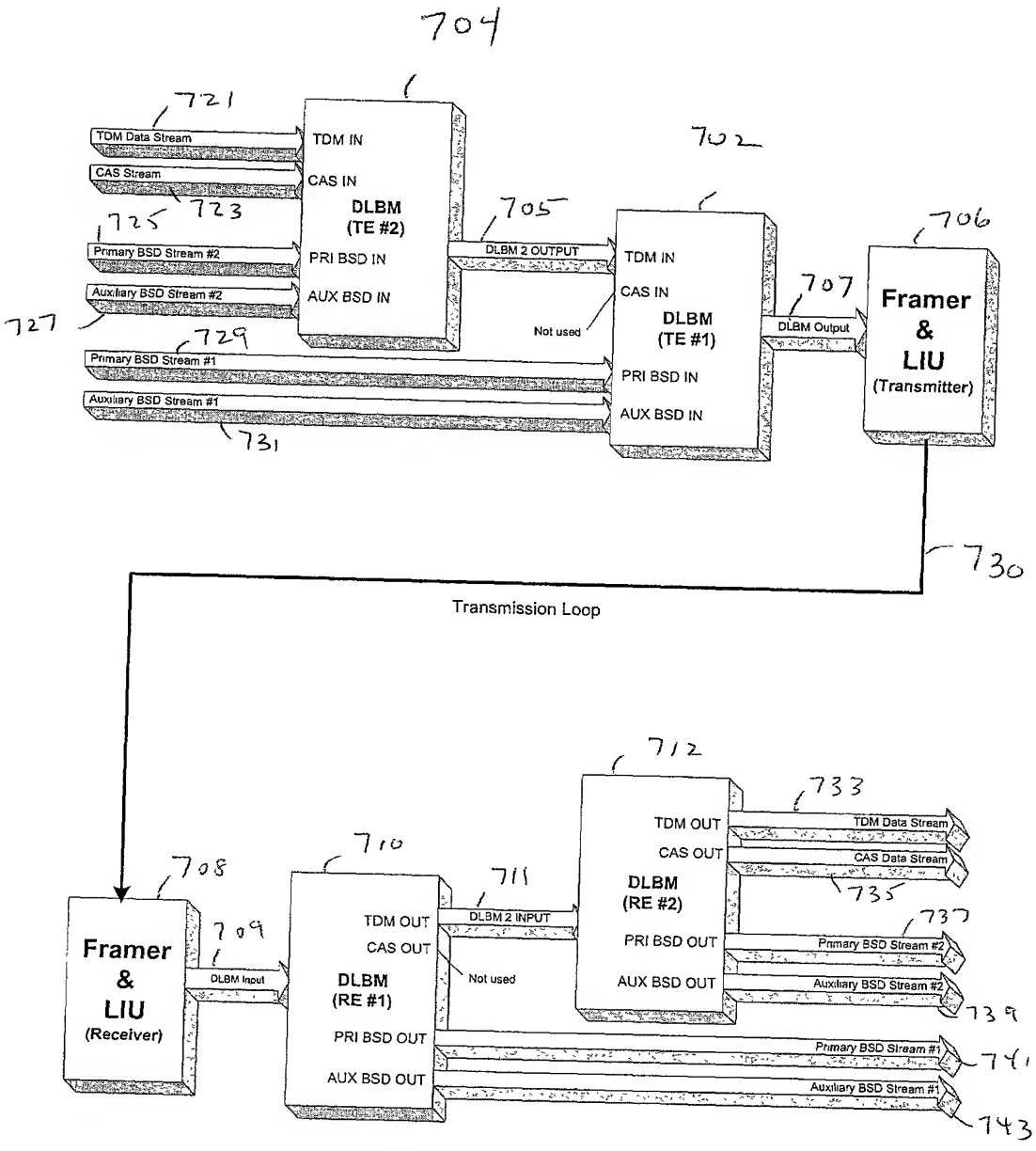

704
721
TDM Data Stream
CAS Stream
723
725
Primary BSD Stream #2
Auxiliary BSD Stream #2
727
729
Primary BSD Stream #1
Auxiliary BSD Stream #1
731
TDM IN
CAS IN
DLBM
(TE #2)
PRI BSD IN
AUX BSD IN
705
DLBM 2 OUTPUT
Not used
702
TDM IN
CAS IN
DLBM
(TE #1)
PRI BSD IN
AUX BSD IN
707
DLBM Output
706
Framer
&
LIU
(Transmitter)
730
Transmission Loop
708
Framer
&
LIU
(Receiver)
709
DLBM Input
710
TDM OUT
CAS OUT
DLBM
(RE #1)
PRI BSD OUT
AUX BSD OUT
711
DLBM 2 INPUT
Not used
712
TDM OUT
CAS OUT
DLBM
(RE #2)
PRI BSD OUT
AUX BSD OUT
733
TDM Data Stream
CAS Data Stream
735
737
Primary BSD Stream #2
Auxiliary BSD Stream #2
739
Primary BSD Stream #1
741
Auxiliary BSD Stream #1
743

Figure 17